

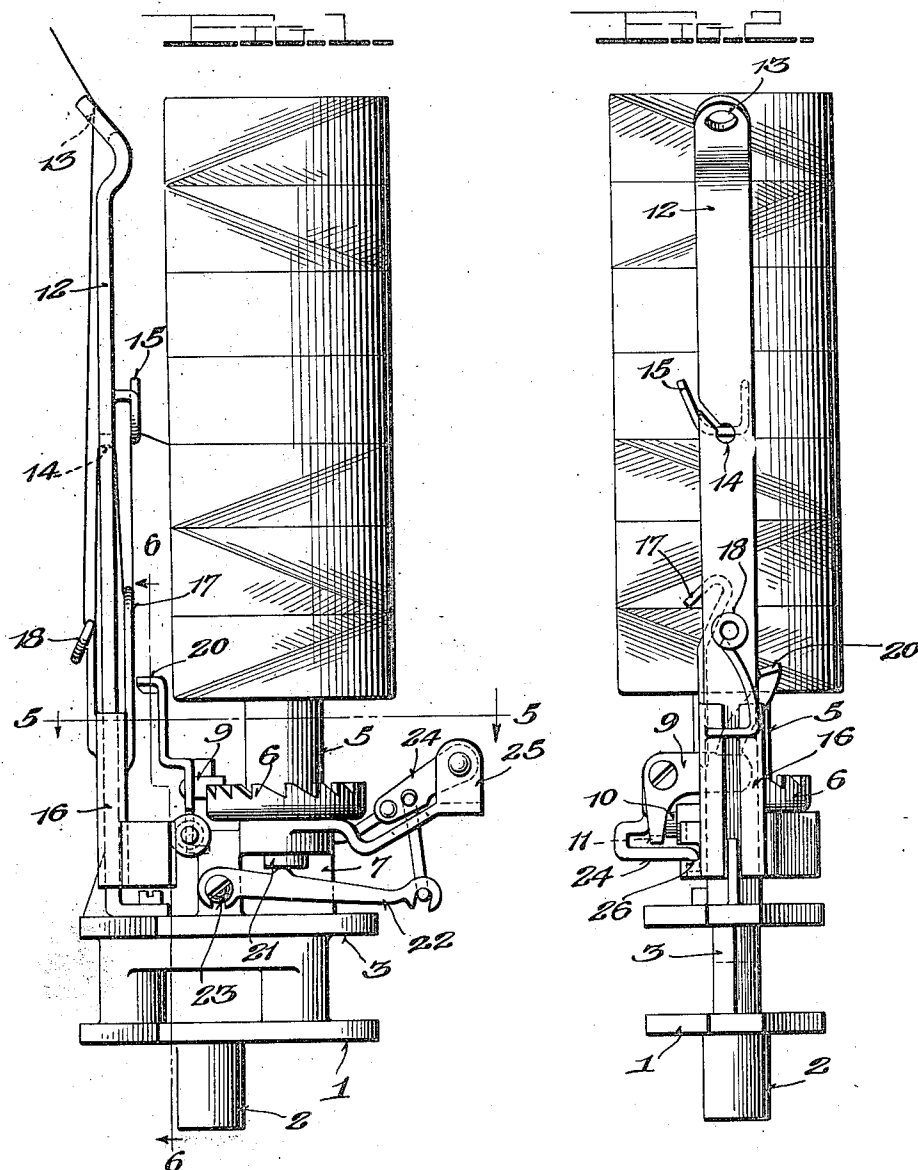
March 25, 1924.

1,488,032

J. E. CHACE

SPOOL CARRIER FOR BRAIDING MACHINES

Original Filed Dec. 24, 1920 3 Sheets-Sheet 1



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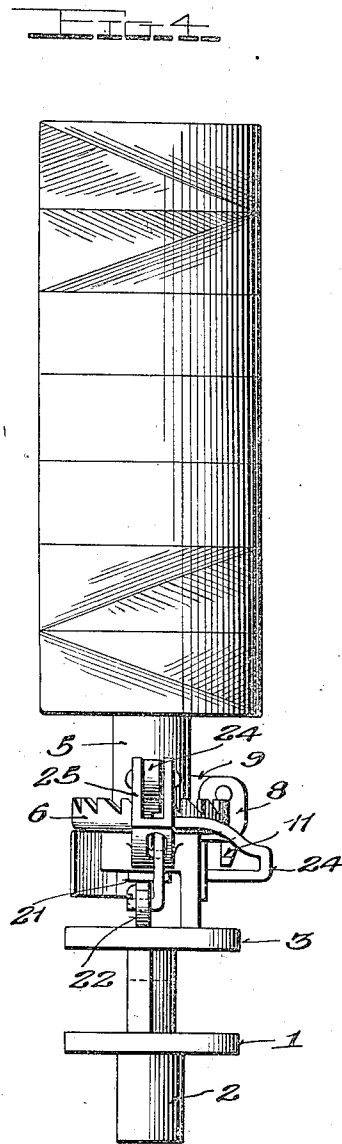
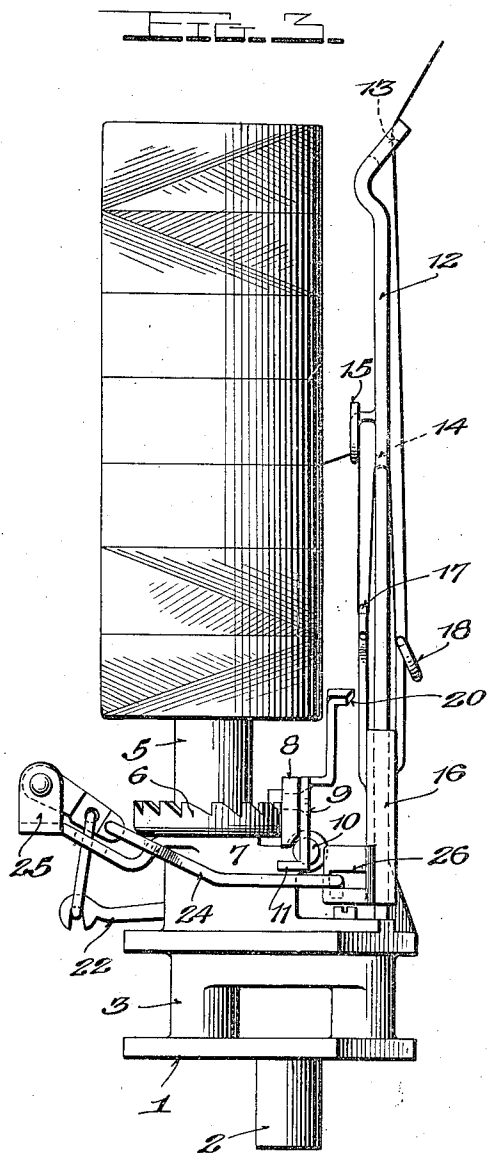
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SPOOL CARRIER FOR BRAIDING MACHINES

Original Filed Dec. 24, 1920 3 Sheets-Sheet 2



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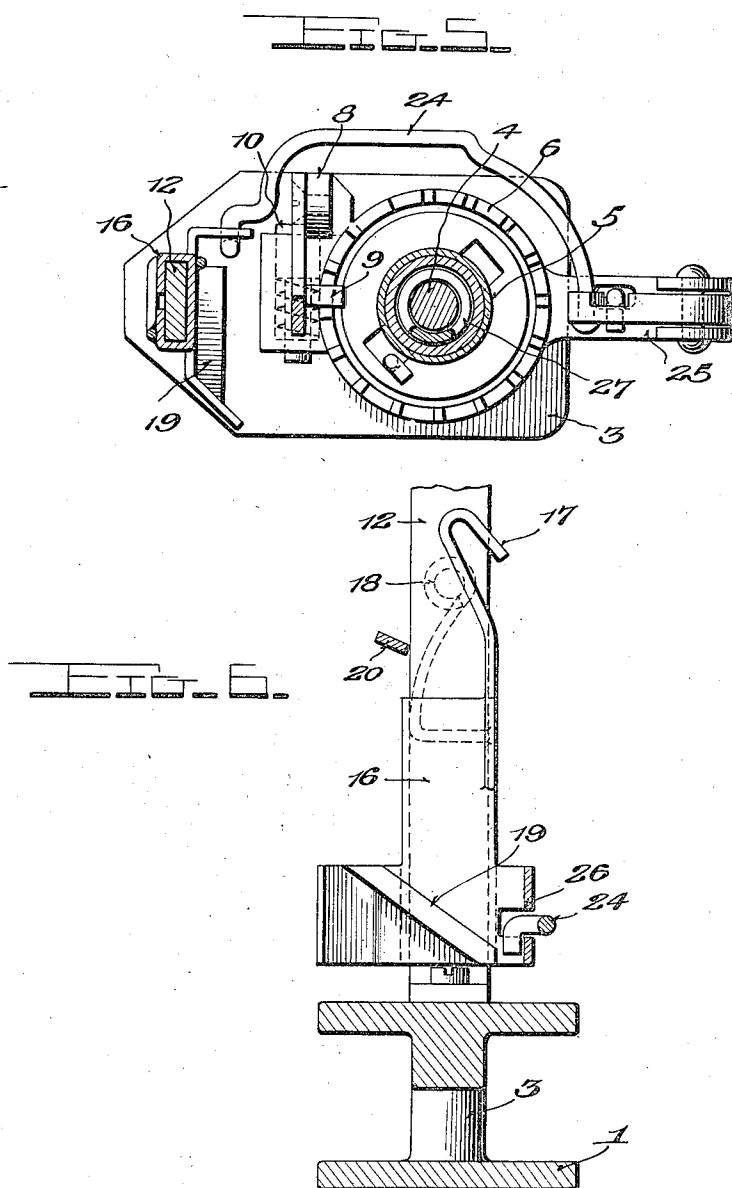
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Original Filed Dec. 24, 1920 3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE.

JOHN EDDY CHACE, OF ADAMSDALE, MASSACHUSETTS.

SPOOL CARRIER FOR BRAIDING MACHINES.

Refiled for (abandoned) application Serial No. 432,918, filed December 24, 1920. This application filed May 14, 1923. Serial No. 639,011.

To all whom it may concern:

Be it known that I, JOHN EDDY CHACE, a citizen of the United States, residing at Adamsdale, in the county of Bristol and State of Massachusetts, have invented new and useful Improvements in Spool Carriers for Braiding Machines, of which the following is a specification.

This invention relates to certain new and useful improvements in spool carrier for braiding machines, and it has for its primary object to provide an improved carrier embodying the entire let-off mechanism below the bobbin whereby all the weight, excepting that of the bobbin and its yarn, is brought down close to the operating mechanism or to the point to which said operating mechanism is applied for moving the carrier on the bed of the braiding machine. The invention further resides in an improved let-off mechanism and the manner of mounting the same on a bobbin carrier for providing a better balanced structure.

Further, the invention is found to reside in the features of construction and the arrangements and combinations of parts hereinafter described and claimed, reference being had to the accompanying drawings wherein,

Figure 1 is a side elevation of a bobbin carrier constructed in accordance with the present improvements;

Figure 2 is an end view thereof;

Figure 3 is an elevation of the opposite side of the carrier; further depicting the invention and construction;

Figure 4 is a similar view of the opposite end of the carrier;

Figure 5 is a horizontal section below the bobbin on line 5—5 of Figure 1; and

Figure 6 is a fragmentary vertical section about on line 6—6 of Figure 1 further showing the thread or yarn tensioning device.

Referring more in detail to the drawings, the carrier 1 comprises a depending shaft 2 to which power is applied for moving the carrier on the bed of the braiding machine (not shown), and a body portion 3 which moves in a slot in the bed of the braiding machine. The bobbin spindle 4 rises from the body portion 3 for supporting the bobbin 5, the latter seating interlockingly in the cup-shaped ratchet wheel 6 which is rotatable on the spindle and has its ratchet teeth formed in the upper edge thereof.

The body portion also is provided with an enlargement at the base of the spindle, the same constituting a base which supports the ratchet during its rotary, intermittent movements. An arm 8 rises from this base 7 alongside the ratchet and pivotally supports a pawl 9 designed to engage the ratchet and prevent retrograde movement or unwinding of the bobbin. The pawl is urged to its operative position by means of a spring pressed plunger 10 bearing against the depending arm of the pawl, said arm having its lower end deflected, as at 11, to form a stop engageable with the base to limit the disengaging movement of the pawl.

Extending up alongside the bobbin is a thread-guiding standard 12 which terminates at its upper end in an eye 13 through which the thread or yarn passes to the work being accomplished. Intermediate its ends, the standard is formed with an inwardly and downwardly inclined slot leading to a threading eye 14, and adjacent this eye a thread-guiding hook 15 is fixed to the standard. Slidable on the lower portion of the standard is the tensioning device consisting of the slide 16 bearing a pair of upstanding hooks 17 and 18, arranged on opposite sides of the standard, and a transversely arranged incline or cam 19. The thread, in leaving the bobbin passes through hooks 15 and 17, eye 14, hook 18 and eye 13, and as the yarn is used up, the tension on the same will cause the slide 16 to rise bringing its cam 19 into contact with an over-hanging trip 20 on the pawl 9 and, on continued movement of the tensioning device, lift the pawl from engagement with its ratchet which action will result in freeing the bobbin and permit the latter to rotate to feed off the yarn. As the supply of fed yarn approaches and exceeds the demand, the tensioning slide descends and the pawl again becomes operative, or in other words, arrests the unwinding movement of the bobbin. To place the slide under increasing tension as it moves upwardly, and to provide a more positive lowering action thereof, a spring pressed plunger 21 is mounted in the lower end of the spindle for pressing downwardly on a lever 22 which is pivoted at one end to the base, as at 23, and has its opposite end linked to a second lever 24. This latter lever is fulcrumed on an outstanding arm 25 on the base and em-

bodies a yoke section straddling the adjacent structure and its terminal slidably engaged in a slot 26 of the slide 16. Obviously, as the slide is lifted the lever 24 is also swung upwardly, carrying with it the linked lever 22 and, in turn, the latter causes the plunger 21 to recede against the action of its spring 27.

The construction is all arranged at the lower end of the spindle so that the weight is located beneath the bobbin to better balance the carrier as it moves across the bed of the machine. The operation is simple and positive and the bobbin is readily accessible simply by removing the bobbin. No parts interfere with the removal of the bobbin since the latter is supported well above the let-off mechanism and in effect serves as a protecting cover or housing thereover.

This application is filed in substitution of my abandoned application of Dec. 24, 1920.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a bobbin carrier, a body having a spindle, a bobbin thereon, bobbin arresting means, a standard on the body having an upper eye and a lower eye, a hook on the standard adjacent the lower eye, and a slide on the standard below the hook and having a pair of hooks disposed on opposite sides of the standard, the thread from the bobbin passing through the standard hook, thence downwardly through one of the slide hooks, thence through the lower standard eye, thence downwardly and through the other slide eye and finally upwardly through the upper standard eye.

2. A bobbin carrier comprising a body portion having an upstanding spindle thereon, a ratchet rotatable on the spindle and connectible with a bobbin when placed on the spindle, a vertically disposed bell-crank pawl pivoted to the body portion for engagement with the ratchet, a spring pressed plunger acting on the pawl to urge it to its operative position, and a tensioning device operable upon the tensioning of the yarn to disengage the pawl from the ratchet.

3. In a bobbin carrier, a body having a spindle thereon, a lever pivoted at one end to the body, means to tension the opposite end of the lever downwardly, a second lever pivoted to the spindle and connected to the said opposite end of the first lever, a tensioning device loosely connected to the second lever, and bobbin arresting means engaged by the second lever and rendered inoperative thereby upon movement of the tensioning device from its normal position.

4. In a bobbin carrier, a body having a spindle, a rotatable ratchet on the spindle having upwardly facing teeth, a vertically disposed bell-crank lever pivoted to the body and having a horizontal pawl on its hori-

zontal arm engaged with the ratchet teeth, a horizontal spring pressed plunger acting against the vertical arm of the bell-crank lever, and a tensioning device operable upon the tensioning of the yarn to disengage the pawl from the ratchet.

5. In a bobbin carrier, a body having a spindle, a ratchet on the spindle, a pivoted pawl engageable with the ratchet and having a substantially vertical arm, a spring pressed plunger acting against said arm to hold the pawl engaged with the ratchet, a second substantially vertical arm on the pawl having a trip, and a slide having a part for engagement with the trip.

6. A bobbin carrier comprising a body portion having an upstanding spindle thereon, a ratchet rotatable on the spindle at its base, a pawl pivoted on the body portion below a bobbin, when placed on the spindle, to engage the ratchet and thereby hold the bobbin against unwinding, a standard extending up from the body portion and having an eye in its upper end and a second eye intermediate its ends, a thread hook fixed to the standard adjacent its second eye, a slide operable on the standard below said hook and having a pair of thread hooks arranged on the opposite sides of the standard, the thread of the bobbin passing through the first mentioned thread hook, through one of said slide hooks, the second eye, the other slide hook, and the first eye, and means carried by the slide to disengage the pawl from the ratchet.

7. A bobbin carrier comprising a body portion having an upstanding spindle thereon, a ratchet rotatable on the spindle at its base, a pawl pivoted on the body portion below the bobbin when placed on the spindle to engage the ratchet and thereby hold the bobbin against unwinding, a standard extending up from the body portion and having an eye in its upper end and a second eye intermediate its ends, a thread hook fixed to the standard adjacent its second eye, a slide operable on the standard below said hook and having a pair of thread hooks arranged on opposite sides of the standard, and a cam part carried by the slide for engaging the pawl to disengage it from the ratchet upon movement of the slide due to the tensioning of the thread.

8. A bobbin carrier comprising a body portion having an upstanding spindle thereon, a ratchet rotatable on the spindle at its base, a pawl pivoted on the body portion below the bobbin when placed on the spindle to engage the ratchet and thereby hold the bobbin against unwinding, a standard extending up from the body portion and having an eye in its upper end and a second eye intermediate its ends, a thread hook fixed to the standard adjacent its second eye, a slide operable on the standard below said

hook and having a pair of thread hooks arranged on opposite sides of the standard, a cam part carried by the slide, a trip cam arranged in the path of the cam part to effect
5 disengagement of the pawl from the ratchet, and means for urging the slide to its normal position.

9. A bobbin carrier comprising a body portion having an upstanding spindle thereon, a ratchet rotatable on the spindle at its base, a pawl pivoted on the body portion below the bobbin when placed on the spindle to engage the ratchet and thereby hold the bobbin against unwinding, a standard extending up from the body portion and having an eye in its upper end and a second eye intermediate its ends, a thread hook fixed to the standard adjacent its second eye, a slide operable on the standard below said
20 hook and having a pair of thread hooks arranged on opposite sides of the standard, a cam part carried by the slide, a trip arm arranged in the path of the cam part to effect disengagement of the pawl from the ratchet,
25 a lever pivotally connected to the body portion and having one end loosely connected to the slide, and spring means for urging the lever and slide to their normal positions.

10. In a bobbin carrier, a body portion, a spindle thereon, a spring pressed plunger arranged in the lower end of the spindle and acting downwardly toward the body portion, a lever on which the plunger acts, a second lever pivoted laterally of the spindle and connected to the first lever so as to be tensioned downwardly thereby, a tensioning device to which the second lever is connected for urging the device to its normal position, and bobbin arresting means rendered
40 inoperative upon movement of the tensioning device from its normal position.

11. In a bobbin carrier, a body having a spindle, a ratchet on the spindle, a substantially horizontal lever pivoted at one end to

the body, a second lever pivoted at one end at a point adjacent to and above the opposite end of the first lever, a slide, the opposite end of the second lever being loosely connected to the slide, a depending connection between an intermediate point on the second lever and said opposite end of the first lever, means to tension the first lever, and thereby the second lever downwardly, and bobbin arresting means actuated by the second lever to inoperative position.

12. In a bobbin carrier, a bobbin receiving spindle, bobbin arresting means, a standard, a slide on the standard, means connected to the slide and being normally spaced from the bobbin arresting means to engage and release same upon movement of the slide, and means to tension said second named means and to thereby tension the slide.

13. In a bobbin carrier, a bobbin receiving spindle, a rotatable ratchet on the spindle, a pawl engageable with the ratchet, a standard, a slide on the standard, and spring pressed means to engage the slide to tension same downwardly and being normally spaced from the pawl and being movable to engage and thereby release same from the ratchet.

14. In a bobbin carrier, a bobbin receiving spindle, a rotatable ratchet on the spindle, a pawl engageable with the ratchet, a standard, a slide on the standard, means to engage the slide and for operating the pawl to release same from the ratchet, and a spring pressed plunger in the base of the spindle for engaging said first named means and for tensioning same.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN EDDY CHACE.

Witnesses:

S. N. BARRY,
J. A. MILLER.